

PRODUCT INFORMATION



Cardiotrophin-1 (human, recombinant)

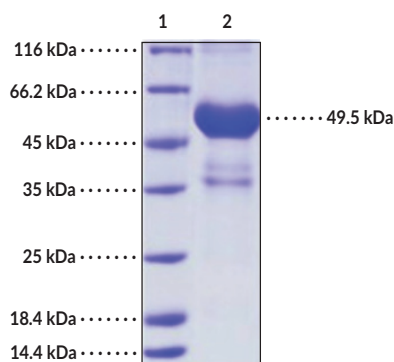
Item No. 33733

Overview and Properties

| | |
|---------------------------|--|
| Synonyms: | CT-1, CT1, CTF1 |
| Source: | Active recombinant N-terminal human IgG1 Fc-tagged cardiotrophin-1 expressed in HEK293 cells |
| Amino Acids: | 2-201 |
| Uniprot No.: | Q16619 |
| Molecular Weight: | 49.5 kDa |
| Storage: | -80°C (as supplied) |
| Stability: | ≥1 year |
| Purity: | ≥80% estimated by SDS-PAGE |
| Supplied in: | Lyophilized from sterile PBS, pH 7.4 |
| Endotoxin Testing: | <1.0 EU/μg, determined by the LAL endotoxin assay |
| Bioactivity: | See figures for details |

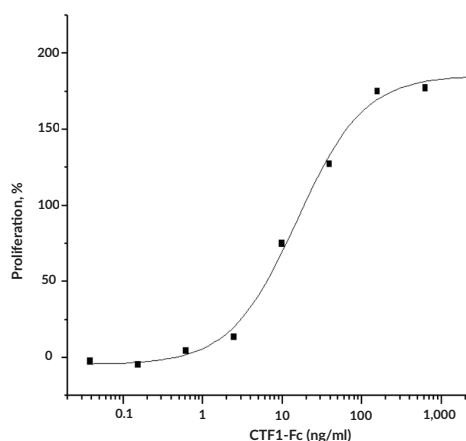
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: Cardiotrophin-1

SDS-PAGE Analysis of Cardiotrophin-1. This protein has a calculated molecular weight of 49.5 kDa. It has an apparent molecular weight of approximately 54.0 kDa by SDS-PAGE under reducing conditions due to glycosylation.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

Cardiotrophin-1 is a glycosylated polypeptide and member of the IL-6 family of cytokines.¹ It is composed of four α -helices but lacks the hydrophobic N-terminal secretion signal sequence that most IL-6 family proteins contain.² Cardiotrophin-1 is primarily expressed in embryonic and adult cardiomyocytes, but it is also expressed in skeletal muscle, as well as the liver, lungs, and kidneys.^{1,3} Its expression is increased under cellular stress conditions, such as hypoxic stress.¹ Cardiotrophin-1 forms a heterocomplex with gp130 and leukemia inhibitory factor receptor β (LIFR β) in cardiomyocytes and, in other cells, with gp130, LIFR β , and cytokine-specific α -chains, which signal through the JAK/STAT, ERK/MAPK, and PI3K/AKT pathways. It induces cardiomyocyte hypertrophy *in vitro*, and levels of cardiotrophin-1 are increased in the heart in animal models after myocardial infarction and protect the heart from ischemic injury.¹ Serum levels of cardiotrophin-1 are increased in patients with heart failure and hypertensive disease.² It has both protective or detrimental effects in various tissues, including the heart, kidney, and vasculature.^{1,3} Cayman's Cardiotrophin-1 (human, recombinant) protein is a disulfide-linked homodimer. The reduced monomer, composed of cardiotrophin-1 (amino acids 2-201) fused to human IgG1 at its N-terminus, consists of 460 amino acids and has a calculated molecular weight of 49.5 kDa. As a result of glycosylation, the monomer migrates at approximately 54 kDa by SDS-PAGE under reducing conditions.

References

1. García-Cenador, M.B., Lopez-Novoa, J.M., Díez, J., *et al.* Effects and mechanism of organ protection by cardiotrophin-1. *Curr. Med. Chem.* **20**(2), 246-256 (2013).
2. López-Yoldi, M., Moreno-Aliaga, M.J., and Bustos, M. Cardiotrophin-1: A multifaceted cytokine. *Cytokine Growth Factor Rev.* **26**(5), 523-532 (2015).
3. Asrih, M., Mach, F., Quercioli, A., *et al.* Update on the pathophysiological activities of the cardiac molecule cardiotrophin-1 in obesity. *Mediators Inflamm.* 370715 (2013).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM